

REMARKS

Claims 1-14 are pending. Applicants thank the Examiner for the withdrawal of the objection to Claim 1 as necessitated by Applicants' previous Amendment. Claims 5 and 6 are currently amended herein to similarly reflect the previous amendment of Claim 1. Applicants believe these amendments, which do not add any new matter, more clearly recite the patentable subject matter. Applicants believe all claims are in a condition for allowance and respectfully request reconsideration and withdrawal of all rejections under 35 U.S.C § 103(a).

Claims 1-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,434,649 to Baker et al. (hereinafter, "Baker") in view of U.S. Patent Application Publication 2005/0021813 to Kovacevic et al. (hereinafter, "Kovacevic") in view of U.S. Patent 6,732,084 to Kabra et al. (hereinafter, "Kabra"). Applicants traverse this rejection based on the Examiner's continued failure to establish a prima facie case of obviousness based on the cited references, despite the addition of Kabra. Baker, Kovacevic and Kabra, individually or in combination, do not disclose or suggest all of the elements of the independent claim.

1. Discussion of Example Embodiments of the Present Invention

Without limitation to the claims, example embodiments of the present invention are directed to a Programmable Streaming Data Processor (PSDP) which is arranged to perform primitive functions directly on data received from a streaming data interface. The PSDP processes data from a streaming data source, such as a disk drive, prior to its being forwarded to a central processing unit (CPU) of a more general processor. The PSDP performs certain preliminary processing in order to reduce the computational load on the local CPU.

The PSDP may have processing logic known as a Data Engine that is capable of examining fields of a record to determine whether a record will or will not be passed to the CPU of the JPU as an output tuple. An output tuple is comprised of the fields of the source record from the disk that are to be selected for further processing by the CPU and PSDP generated fields. For example, a record retrieved from disk consists of a record header, typically containing more than one header field, and at least one data field, and typically, many data fields for each record. The collection of fields selected for return to the CPU as a result of processing a

record is referred to as a tuple. Possible tuple fields include various record header fields, the PSDP generated record address, unmodified record data fields, a hash field, and tuple status and length information. Boolean results and/or scratch pad words may also form parts of tuples. Most often a tuple will be shorter than the record that was used to generate it, but it may be longer, depending upon the program that is provided to the PSDP.

As data streams out of the filter, an output tuple is formed in a First In, First Out (FIFO) memory, in a way that permits aborting the tuple if the filter logic determines that the particular tuple should not be passed on to the CPU. Specifically, in an example embodiment, the memory FIFO has two write pointers, an “active” write pointer and a “visible” write pointer. The visible pointer maintains a position indicating a boundary of the last accepted tuple. Meanwhile, the active write pointer moves along the memory FIFO from the boundary, as words of the next possible tuple become available. As the PSDP logic determines that a tuple is not to be used, such as a result of the filter or TID processing described above, the memory FIFO’s active write pointer resets by moving back to the visible write pointer location. This has the effect of ignoring the intervening fields of the unwanted tuple and allowing them to be overwritten. If the PSDP logic makes this determination while the active pointer is still pointed to a field within the unwanted tuple, the active pointer will simply reset to the visible pointer location until the last field within that unwanted tuple has been overwritten. If, on the other hand, the PSDP logic determines that a tuple is to be used, the visible pointer moves to the active pointer position, having the effect of keeping all intervening fields of the tuple that should be kept.

2. The Examiner Fails to Meet the Burden of Showing a Prima Facie Case of Obviousness

Baker relates to a data processor, and more specifically to a data transfer arrangement mechanism employed to transfer data to various components within a data processor. Such a multimedia processor and data transfer arrangement are directed to processing computer graphics and graphics on a standalone gaming console.

Kovacevic relates to receiving a compressed video stream, such as an MPEG-2 video stream, by a transport demultiplexor, synchronizing the video stream, parsing the video stream into separate packet types and writing the video stream data to buffer locations external to the demultiplexor. The video data control module of Kovacevic contains logic that enables the

video data payload of a current packet to be stored and employs a field which, when negated, prevents any data from the current video packet from being saved.

Kabra relates to parallel execution of trigger actions by a dispatcher, which also sets up the communication links between the various operators in the trigger action and ensures that all the results are sent back to the trigger.

There is no suggestion in Baker, as purported by the Examiner, of an output FIFO device, arranged to store temporarily tuples formed by the tuple generator prior to the data engine conditionally forwarding them to the JPU. Kovacevic similarly so fails. Although the Examiner states at the bottom of page 4 of the Office Action that Baker discloses an output FIFO, Applicants believe this is in error because the Examiner later states at the bottom of page 5 that the combination of Baker and Kovacevic fails to disclose the same output FIFO. Further, the abstract of Kovacevic, as generally relied on by the Examiner, fails to disclose a data engine, arranged to receive output data from the streaming interface FIFO, to determine field boundaries therein, and to process fields to select one or more fields to be assembled into output tuples, and only discloses parsing a compressed video stream into separate packet types.

The Examiner now further relies on Kabra for the further limitations of the data engine also containing logic arranged to determine whether an output tuple is to be selected for further processing by additional JPUs and to assert a use or lose decision value according to that determination; a tuple generator, arranged to assemble fields into the output tuple and, if the use or lose decision value indicates that such output tuple is to be discarded, to prevent the output tuple from being transferred for further processing by the JPU; and an output FIFO device, arranged to store temporarily tuples formed by the tuple generator prior to the data engine conditionally forwarding them to the JPU. However, Kabra fails to disclose all the above limitations and does not overcome the deficiencies of the combination of Baker and Kovacevic.

The Examiner bears the burden of establishing a prima facie case of obviousness. To establish a prima facie case of obviousness under 35 U.S.C. § 103, the Examiner must demonstrate that each and every claim limitation is taught or suggested by the cited references, and that a combination of such elements would be obvious to one of ordinary skill in the art. Manual of Patent Examining Procedure (MPEP) § 2143. Because multiple elements of Claim 1 are not found in the references, the rejection should be withdrawn.

In order for the Examiner to cite combined prior art references in support of a prima facie case of obviousness, all claim limitations must be considered. Further, "All words in a claim must be considered in judging the patentability of that claim against the prior art." MPEP § 2143.03, citing *In re Watson*, 424 F.2d 1382, 1385.

The Examiner's rejection is deficient for failing to cite any prior art teaching or suggesting "asserting a use or lose decision value according to that determination" (i.e., the determination of whether an output tuple is to be selected for further processing by additional JPUs). There is no intrinsic teaching or suggestion in the combination of Baker, Kovacevic and Kabra (hereinafter, Baker/Kovacevic/Kabra) to so assert or determine. Certainly there is no explicit teaching or suggestion in Baker/Kovacevic/Kabra to so assert or determine. The Baker/Kovacevic/Kabra combination does not overcome the deficiencies of Baker. Baker/Kovacevic/Kabra does not teach a data engine for determining field boundaries in output data from the streaming interface FIFO and for processing fields to select one or more fields to be output tuples, or a tuple generator for assembling fields into the output tuple. For this reason, the Examiner's rejections are traversed and therefore should be withdrawn. Reconsideration is respectfully requested.

3. Even if All Elements are Found in the References, the Examiner Has Not Correctly Applied the Law

According to the reasoning which is to be applied per the most recent revision of the MPEP:

The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1396 (2007) noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Federal Circuit has stated that "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See also *KSR*, 550 U.S. at ___, 82 USPQ2d at 1396 (quoting Federal Circuit statement with approval).

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The Examiner's reasoning appears to fit best under the rational discuss under part (G) of that section.

(G) Some Teaching, Suggestion, or Motivation in the Prior Art That Would Have Led One of Ordinary Skill To Modify the Prior Art Reference or To Combine Prior Art Reference Teachings To Arrive at the Claimed Invention (Emphasis added)

To reject a claim based on this rationale, Office personnel must resolve the *Graham* factual inquiries. Then, Office personnel must articulate the following:

- (1) a finding that there was some teaching, suggestion, or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings;
- (2) a finding that there was reasonable expectation of success; and
- (3) whatever additional findings based on the *Graham* factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness.

The rationale to support a conclusion that the claim would have been obvious is that "a person of ordinary skill in the art would have been motivated to combine the prior art to achieve the claimed invention and that there would have been a reasonable expectation of success." *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360, 80 USPQ2d 1641, 1645 (Fed. Cir. 2006). If any of these findings cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art.

Id.

Applicants first note that the motivation offered by the Examiner is impermissibly taken from Applicants' own disclosure. "The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure." MPEP § 2143 citing *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991). Indeed, Applicants teach performing certain preliminary processing in order to reduce the computational load on a local CPU. Kabra neither teaches nor suggests performing such primitive initial processing functions by the claimed processor or any other means. Accordingly, the motivation stated by the Examiner cannot be relied upon. Thus, Kabra fails to teach, suggest or motivate one of ordinary skill in the art to modify its teachings by applying its parallel execution in combination with the data engines of Baker and Kovacevic. For this reason, the Examiner's

rejections are traversed and therefore should be withdrawn. Reconsideration is respectfully requested.

4. Claim Rejections

With regard to the Examiner's rejection of Claim 1, as stated above, the Examiner has failed to meet the burden of showing a prima facie case of obviousness and has not shown it was obvious to combine the references. Baker/Kovacevic/Kabra does not overcome any of the deficiencies of Baker. For these reasons, the Examiner's rejection of Claim 1 and all claims which depend from it are overcome and reconsideration is respectfully requested.

With regard to the Examiner's rejection of Claims 3 and 4, Baker/Kovacevic/Kabra does not overcome any of the deficiencies of Baker and discloses neither a Transaction Identifier nor TID processing, let alone TID processing and data engine logic being executed in parallel. Further, Claims 3 and 4 are dependent on Claim 1 and therefore contain all the limitations of the base claim. For these reasons, the Examiner's rejection of Claims 3 and 4 is overcome and reconsideration is respectfully requested.

With regard to the Examiner's rejection of Claim 6, Baker/Kovacevic/Kabra does not overcome any of the deficiencies of Baker and fails to disclose not asserting the use or lose decision value when a buffer local to the programmable data streaming processor is full; and means for appending an overflow filter bit to a tuple that indicates a transfer of a tuple that should be ignored. The value of the valid bit used in Baker indicates whether the specific byte is valid or not. Baker does not, however, not assert a use/lose decision value when a buffer local to the programmable data streaming processor is full and make no use of an overflow filter bit to a tuple that indicates a transfer of a tuple that should be ignored. Baker/Kovacevic does not teach the use of tuples. Further, Claim 6 is dependent on Claim 1 and therefore contains all the limitations of the base claim. For these reasons, the Examiner's rejection of Claim 6 is overcome and reconsideration is respectfully requested.

With regard to the Examiner's rejection of Claims 9 and 10, Baker/Kovacevic/Kabra does not overcome any of the deficiencies of Baker and discloses neither an overflow filter bit nor tuples, let alone an invalid field appended to a tuple or such an overflow filter bit inserted in a length field appended to record fragments. Further, Claims 9 and 10 are dependent on Claim 1

and therefore contains all the limitations of the base claim. For these reasons, the Examiner's rejection of Claims 9 and 10 is overcome and reconsideration is respectfully requested.

With regard to the Examiner's rejections of Claims 2, 5, 7-8 and 11-14, Baker/Kovacevic/Kabra does not overcome any of the deficiencies of Baker. Further, Claims 2, 5, 7-8 and 11-14 are either directly or indirectly dependent on Claim 1 and therefore contain all the limitations of the base claim. For these reasons, the Examiner's rejection of Claims 2, 5, 7-8 and 11-14 is overcome and reconsideration is respectfully requested.

Information Disclosure Statement

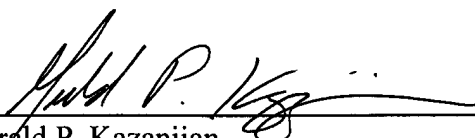
A Supplemental Information Disclosure Statement (IDS) is being filed concurrently herewith. Entry of the Supplemental IDS is respectfully requested.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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